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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,668	05/11/2005	James Bruce Franklin	CU-4204 BWH	6549
26530	7590	08/28/2007	EXAMINER	
LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			TSIDULKO, MARK	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/534,668	<b>Applicant(s)</b> FRANKLIN ET AL.	
	<b>Examiner</b> Mark Tsidulko	<b>Art Unit</b> 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 29-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The submission of amendment filed on 6/7/2007 is acknowledged. At this point claims 29, 30, 36, 39, 41-51, 53, 55, 56 have been amended, claims 1-28 have been canceled, new claim 57 has been added and the remaining claims left unchanged. Thus, claims 29-57 are at issue in the instant application.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-33, 36-40, 45-47, 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naum (US 6,272,269) in view of Pelka et al. (US 6,784,603) and Rai et al. (US 6,369,866).

Referring to Claims 29-31, 36, 39, 57 Naum discloses (Fig.10) an illumination system including a light collector [26] made of light transmissive material, an electrically powered light emitting device [66] and an optical cable [48]. The system can provide a white color light (col.1, line 13).

Naum discloses that the light has a coat having organic dyes (col.8, lines 50-67; col.9, lines 1-6), but does not disclose the light collector doped with the dyes and that the light from collector and light from light source are directed separately into the light guide.

Pelka et al. disclose a fluorescent lighting device having a light collector, which contains a dispersed dyes, that will fluoresce in response to incident light radiation (col.6, lines 23-25).

Providing the light collector having dispersed dyes instead of coating the plurality of LEDs allows providing fluorescent light and simplifying manufacturing method and reducing a price of the device.

Rai et al. disclose (Figs.3, 6) a LCD device wherein light from a light collector [61] and light from the light source [50] are directed separately into light guide [20]. It allows increasing quantity of the light directed into light guide and in a result to increase illumination of LC panel.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the light collector of the device of Naum, having a light collector containing dispersed dyes, as taught by Pelka et al., for the purpose of simplifying manufacturing method and reducing a price of the device and provide the illumination of the light guide of the device of Naum, as taught by Rai et al. in order to increase intensity of illumination.

Referring to Claims 37 and 38 the functional recitation that the optical cable has a cross-sectional area through which light is reduced by  $1/3$  and  $2/3$  compared to a lighting system in which all colors are generated by collector sheets does not have patentable weight.

Referring to Claim 32 Naum disclose a red LED and blue LED (col.8, line 10).

Naum discloses the instant claimed invention except for a light collector emitting green light.

Pelka et al. disclose a fluorescent lighting device having a light collector, which can emit a green light (col.12, lines 16-29).

Referring to Claim 40 Naum discloses the light sources of different colors, including red, blue and green (col.8, line 10).

Referring to Claim 45 Naum discloses (Fig.10) a lighting device [66] coupled to a light transmissive sheet that is coupled to the light guide [28].

Referring to Claims 46 and 47 Naum discloses (Fig.5) a lighting system including a luminaire [72]. The light collector [26] is coupled to the luminaire without an intervening separate light guide.

Referring to Claims 53, 54 Naum discloses the light output controlled by a control circuit (col.8, lines 22-25).

Referring to Claim 55 Naum discloses more than one lighting devices (Abstract, lines 2, 3).

Referring to Claim 56 Naum discloses (Fig.10) a lighting device containing LEDs.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide red and blue LEDs of the device of Naum in a combination with the light collector emitting green light, as taught by Pelka et al., in order to obtain an illumination with a neutral white color.

Referring to Claim 33 Naum discloses the instant claimed invention except for intensity of the light sources.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with a blue light source emitting 2-20% of the total amount of lumens and the red light source emitting 15-30% of the total amount of lumens, in order to obtain an optimal intensity for mixing with green light, for the purpose of

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illumination with a neutral white color, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 34, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naum, Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Bornstein et al. (US 4,539,625).

Referring to Claim 34 Naum in view of Pelka et al. and Rai et al. disclose the using LEDS of different colors, including blue (col.8, line 10), but does not disclose a light collector sheets emitting green and red light.

Bornstein et al. disclose (Fig.1) a light collector [10] including a sheet [14] emitting a red light and a sheet [16] emitting a green light (col.3, lines 37-40).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum having a blue light source with light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a light collector sheets emitting red and green lights, as taught by Bornstein et al., in order to obtain an illumination with a neutral white color.

Referring to Claim 35 Naum in view of Pelka et al. and Rai et al. the instant claimed invention except for intensity of blue light source.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the blue light emitting 2-20% of the total amount of lumens, in order to obtain an optimal intensity for mixing with green and red lights, for the purpose of

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illumination with a neutral white color, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272; 205 USPQ 215 (CCPA 1980).

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Naum, Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Miyawaki et al. (US 4,832,428).

Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for a prism coupler.

Miyawaki et al. disclose (Fig.4) a light source [16] coupled to the light guide [12] by prism [14] for receiving and directing a light beam from a light source [16].

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a prism, as taught by Miyawaki et al., for the purpose of receiving and directing the light from the light source to the light guide.

Claim 42, 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naum, Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Shahidi-Hamedani et al. (US 5,165,187).

Referring to Claim 42 Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for an optical fiber coupler.

Shahidi-Hamedani et al. disclose (Fig.1A) a lighting device including a light guide [2] and a light source [20] coupled to the light guide by the optical fibers [16]. This structure allows reducing losses of the light entering the light guide.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a light source coupling to the light guide by the optical fibers, as taught by Shahidi-Hamedani et al., in order to reduce losses of the light entering the light guide.

Referring to Claims 50-52 Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for battery and solar cell.

Shahidi-Hamedani et al. disclose a lighting device powered by the battery and solar cell (col.3, lines 17-19).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a battery and solar cell, as taught by Shahidi-Hamedani et al., in order to provide electrical power to energize the light source for illumination.

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Naum, Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Riser et al. (US 6,196,709).

Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for a lens coupler.



Riser et al. disclose (Fig.2) a lighting system wherein a light from a light source [12] is focused by a lens [16] onto the light guide [20].

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a lens, as taught by Riser et al., in order to focus the light onto the light guide and reduce losses of the light entering the light guide.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Naum, Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Grenda et al. (US 6,948,840).

Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for a light source implanted into a light guide.

Grenda et al. disclose (Fig.1) a lighting device having a light source [22] implanted into a light guide [20]. This structure allows all light from the light source entering the light guide.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a light source implanted into a light guide, as taught by Grenda et al., in order to prevent losses of the light entering the light guide.

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Claims 48 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naum and Pelka et al. and Rai et al., as applied to claim 29 above, and further in view of Doong et al. (US 6,200,011).

Naum in view of Pelka et al. and Rai et al. disclose the instant claimed invention except for a lighting device mounted in a luminaire.

Doong et al. disclose (Fig.2) a luminaire and a light source [4] mounted in a luminaire and the light sources [3] and [3'] mounted adjacent to the luminaire. The body of the housing [1] play role of the light guide, guiding a light emitted from the light sources [3] and [3'] and reflected light emitted from the light source [4]. This structure allows obtaining compact size of the device.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Naum with the light collector containing the dyes of Pelka et al. and separately directed lights of Rai et al., having a light source mounted adjacent the luminaire, as taught by Doong et al., in order to reduce size of the device.

### ***Response to Arguments***

Applicant's arguments with respect to claim 29 have been considered but are moot in view of the new ground(s) of rejection. US 6,369,866 to Rai et al. disclose separately directed light from a light source and light collector into a light guide plate, as limited in the amended claim 29.

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In response to Applicant's argument, that Pelka et al. do not show fluorescent light, Pelka et al. disclose a *fluorescent* lighting device having a light collector, which contains a dispersed dyes, that will *fluoresce* in response to incident light radiation (col.6, lines 23-25).


### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

M.T.

August 21, 2007



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